



# Environmental Monitoring Report

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Project Number 37378-013  
Loan Numbers 2710 (SRI) and 2711-SRI (COL)  
Annual Report  
January to December 2018

July 2019

## SRI : Jaffna and Kilinochchi Water Supply and Sanitation Project (JKWS&SP)

Prepared by JKWS&SP Project Management Unit of National Water Supply & Drainage Board(NWS&DB), for the Ministry of City Planning, Water Supply and Higher Education of Sri Lanka and the Asian Development Bank.

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**Asian Development Bank**



**JAFFNA KILINOCHCHI WATER SUPPLY AND SANITATION  
NATIONAL WATER SUPPLY & DRAINAGE BOARD**

**ANNUAL  
ENVIRONMENTAL SAFEGUARDS  
COMPLIANCE REPORT- 2018**

Project Management Coordination and Implementation Unit

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## ABBREVIATIONS

ADB	Asian Development Bank
CEA	Central Environmental Authority
EMP	Environmental Management Plan
GRC	Grievance Redress Committee
IEER	Initial Environmental Examination Reports
JMC	Jaffna Municipal Council
JKWSSP	Jaffna Kilinochchi Water Supply and Sanitation Project
NWSDB	National Water Supply & Drainage Board
PCP	Public Communications Policy
PMU	Project Management Unit
RP	Resettlement Plan
SPS	Safeguard Policy Statement
UDA	Urban Development Authority

## 1. INTRODUCTION

The Jaffna and Kilinochchi Water Supply and Sanitation Project is part of efforts to assist the Government of Sri Lanka in social and physical enhancement of the North which was earlier subjected to a conflict which retarded modernized infrastructure development in the North for a long period of time. Supported by the Asian Development Bank (ADB) and Agence Française de Développement (AFD), with the Ministry of Water Supply and Drainage (MWSD) as the executing agency and the National Water Supply and Drainage Board (NWSDB) as the main implementing agency, the project began with a feasibility study in 2005 – 2006.

The project was financed with a total cost of US\$ 164.04 million (US\$ 90 million from ADB, US\$ 48 million from AFD France and the balance US\$ 26.04 million being the Government contribution). The objective of the project is to improve the health standard and the enhancement of the standards of living of the people in Jaffna peninsula and to support the resettlement and economic development and social welfare of the entire Northern Province. The project was designed to provide safe drinking water to 300,000 people in water scarce areas of Jaffna and Kilinochchi districts and to provide pipe borne sewerage facilities for around 80,000 people in Jaffna Municipal Council area.

The initial design of the drinking water scheme was entirely dependent on abstracting water from Iranaimadu Tank but the progress of the project was hampered due to a dispute over water sharing between drinking water requirement and irrigation needs. After in-depth technical studies and a lengthy evaluation process the consensus has finally been reached to construct a Desalination Plant with 24,000 cu.m./day capacity at Thalayadi village (Vadamaradchi East DS division) in Jaffna district.

The Project (JKWSSP) was revised due to the change of water source from Iranamadu tank to a desalination plant and to strengthen the water supply component. The following changes are proposed: (i) cancellation of water treatment plant and bulk water transportation from Iranamadu tank originally cofinanced by the Agence Française de Développement (AFD), (ii) exclusion of the sewerage component (iii) inclusion of a desalination plant, (iv) inclusion of the household water connections, and (v) inclusion of water resource management and outreach activities. Based on the revised cost estimates and the cancellation of the AFD financing, the government has requested additional financing of \$120 million from ADB to meet the change in project scope and the additional loan was signed on 15th December 2017. The closing date of current loan had been extended from 14 August 2017 to 31 December 2020 to complete the revised project scope through the current project and the proposed additional financing. The project has been categorized as “ Category B” under ADB Safeguard Policy Statement, 2001(SPS).

## 1.1 Contractors', Supervision Consultants' and Clients' role in environmental safeguards compliance

During the construction period the contractor was responsible to implement the mitigation measures listed under EMP and conduct environmental parameter monitoring based on the EMoP. Project Management Coordination and Implementation Unit (PMCIU) headed by the Project director is with overall responsibility for implementation of EMP and EMoP by the contractor. The consultant, M/s.Groonji working under PEIC supervise the Contractor in implementing the EMP. The Prospective contractors has developed an Environmental Management Plan and it have been reviewed and approved by PEIC.

## 2. Construction activities during the Period

### 2.1. Package : 01

<b>SUPPLY AND LAYING OF TREATED WATER TRANSMISSION MAINS FROM PALAI WTP TO NALLUR AND CONSTRUCTION OF TWO TREATED WATER SUMPS AT NALLUR AND MEESALAI</b>	
<b>Contractor</b>	M/s. JMC Projects(India) Ltd
<b>Date of award</b>	27.06.2016
<b>Date of Commencement</b>	01.08.2016
<b>Contract Period</b>	730 days
<b>Date of Completion</b>	01.08.2018, Contract period extension given upto 31 <sup>st</sup> May 2019
<b>Contract Sum</b>	Rs. 2646 Mn
<b>Contruccion Status</b>	
Overall Physical Progress	84.16%
Procurement, Supply & Delivery of DI Pipes / Fittings	99%
Route confirmation and Laying of DI Pipes & Fittings from Puthukkadu-Meesali	96%
Route conformation &Laying of DI Pipes & Fittings from Meesali-Nallur	79%
Culvert Crossing/Bridge crossing/ on column support laying	91%
Construction of Measalai sum & Fixing of	82%

pipes and related works	
Construction of Nallur sum & Fixing of	72%
pipes and related works	
Temporary Reinstatement – RDA, RDD &	92%
UC/PS Roads /Shoulder/Embarkment	
Permanent Reinstatement – RDA, RDD &	54%
UC/PS Roads	
Pressure testing	68.20%
Construction of valve chambers & Fixing of valves	49%

## 2.2. Package : 02

<b>SUPPLY AND LAYING OF TREATED WATER TRANSMISSION MAIN (PART 2) INCLUSIVE OF 144KM OF TWTM SUB MAIN, FOUR WATER RESERVOIRS AND TEN BOOST PS)</b>	
<b>Contractor</b>	M/s China Machinery Engineering Corporation (CMEC) - M/s Business Promotion Partner Engineering (BPPE) Joint Venture
<b>Date of award</b>	21.06.2016
<b>Date of Commencement</b>	26.07.2016
<b>Contract Period</b>	730 days
<b>Date of Completion</b>	26.07.2018, Contract period extension given upto 31 <sup>st</sup> May 2019
<b>Contract Sum</b>	Rs. 2890 Mn
<b>Construction Status</b>	
Overall Physical progress	87.27%
Overall Progress	
Procurement, Supply & Delivery of DI Pipes / Fittings	100.00%
Procurement, Supply & Delivery of HDPE Pipes / Fittings	100.00%

Laying of DI/HDPE Pipes & Fittings from Meesalai sump to Karaveddy/Puttur/Karaveddy new towers	96.00%
Laying of DI Pipes & Fittings from Nallur sump to Old park/JMC/Pommaveli towers and Kallundai sump	92%
Laying of DI/HDPE Pipes & Fittings in Nainathivu/Analaithivu/Eluvaithivu	92%
Laying of DI Pipes & Fittings from Kallundai sump to Karainagar/Kayst/Velanai/ Allalpity /Punkuduthivu towers	95%
Construction of 100 m3 Punguduthivu sump	96.00%
Construction of 1500 m3 Kallundai sump	95.00%
Construction of 100 m3 Pooneri sump	92.00%
Laying of DI/HDPE Pipes & Fittings from Paranthan to Pooneri	95%
Culvert Crossing (20%) /Bridge Crossing (30%) / On Column Support Laying (50%)	85%
Temporary Reinstatement of RDA, RDD, UC/PS Roads and Shoulder, Embankment etc.	65%
Pressure Testing	75%
Construction of valve chambers & Fixing valves	60%

### 2.3 Package : 03

**SUPPLYING AND LAYING OF DISTRIBUTION NETWORKS IN PALAI, KODIKAMAM, MEESALAI, POONAKARY, PUTHUR, NAWATKULI, KARAINAGAR, PUNGUDUTHIVU, VADDUKKODAI, KATTUDAI, NALLUR ZONES, JMC TRANSMISSION PIPELINE AND CONSTRUCTION OF OFFICE/ STORE, QUARTERS AT NAVATKULI, KADDUDAI, VELANAI, POONERY, KARAVEDDY AND POKKANAI.**

<b>Contractor</b>	M/s. Sierra Construction Ltd
<b>Date of award</b>	29.10.2019

<b>Date of Commencement</b>	03.12.2019
<b>Contract Period</b>	730 days
<b>Date of Completion</b>	02.12.2020
<b>Contract Sum</b>	Rs. 2192.15 Mn
<b>Contruction Status</b>	
Overall Physical Progress	12% completed
Procurement, Supply & Delivery of PVC Pipes / Fittings	
Construction OIC building at Navatkuli	

### 3. Environmental impacts, mitigation measures taken at site and monitoring

There are impacts on physical, ecological and social environments for which mitigation measures have been taken by the contractor under the supervision of PMCIU and PEIC. The effectiveness of mitigation measures has been monitored and recorded by the contractor and PMCIU. In cases where further actions were needed, the PMCIU and PEIC have advised the contractor. Table 3.1 below summarizes the activities carried out in each subproject, their impacts to the environment, mitigation measures taken to avoid/ minimize the adverse impacts, effectiveness of the mitigation measure adopted and any further action needed.

Table 3.1; Activities carried out in each subproject, their impacts to environment, mitigation measures, effectiveness and any further action needed

Environmental Issues to consider	Mitigation measures	Monitoring Parameter	Mitigati on Implem ented	Mitigation effectiveness		Status of Corrective Action	Further Corrective Actions Required /Timely
				Current Quarter	Overall Perform		Nature of Further Corrective Actions
Activity: 1. 1.Site clearing before starting construction							
Removal of greenary by cutting large trees shall tend to pollute environment	(i)To avoid un-necessary tree cutting by demarcating trees exactly to be removed	(i)Trees exactly to be removed are demarcated	Yes	-	-	Resolved	
	(i)To implement tree re-planting program	(i)Suitable land is selected	Yes	-	-	Resolved	
	(i)To select and maintain suitable plant	(i)Suitable plants are selected and maintained	Yes	-	-	Resolved	
Activity: 1.2 Foundation Excavation for structures (water towers, sumps, pump houses and buildings)							
Insufficient protective measures around deep excavation shall endanger safety of workers at ground level	(i)To provide adequate warning boards and barricades and maintained	(i)Adequate warning boards and barricades are provided and well maintained	Yes	-	-	Resolved	
Unstable deep excavation shall endanger safety of workers inside the pit	(i)To provide shoring as per engineer's recommendation	(i)Shoring arrangements are provided as per engineer's recommendations	Yes	-	-	Resolved	

Shoring arrangements may cause sound pollution to the environment	(i)Soundless machinery can be used for drill sheetpiles	(i)machinery were used with soundproof	Partly	Moderate	To be improved	Outstanding	
<b>Activity: 1. 3. Construction of structures (water towers, sumps, pump houses and buildings)</b>							
Occupational injuries and illness caused by substandard working arrangements (warning boards, scaffoldings, safety nets, form work, ladders, temporary access etc.)	(i)To provide adequate warning boards, barricades, safety nets, temporary access and standard scaffoldings, form work and ladders and maintained until construction is over	(i)Adequate warning boards, barricades, safety nets, temporary access are provided and maintained well	Partly	Moderate	To be improved	Outstanding	
Night works disturb neighbours and environment	(i) Minimise the work in night. Schdule the minor works at night. Inform the neighbours regarding the working time prior	(i) Night works are arranged as planned withour affecting the neighbours and environment	Yes	-	-	Outstanding	
<b>Activity: 1. 4. Excavation of Trial pits and trenches</b>							
Insufficient protective measures around pits and trenches shall endanger safety of workers/ pedestrians /road users	(i)To provide sufficient protective measures around pits and trenches for the safety of workers/ pedestrians /road users	(i)Adequate warning boards, barricades, luminous stickers, night lamps are provided and maintained well	Yes	Moderate	To be improved	Outstanding	
Unstable trenches shall endanger safety of workers inside the pits and trenches	(i)To provide shoring as per engineer's recommendation	(i)Shoring arrangements are provided as per engineer's recommendations	Partly	Moderate	To be improved	Outstanding	
Material stockpiles at the edges of the pits and trenches shall endanger the safety of workers inside the pit	(i)To place material stockpiles away from the edges of the pits and trenches	(i)Material stockpiles are away from the edges of the pits and trenches	Yes	Fair	To be continue	Resolved	
<b>Activity: 1. 4. Rock excavation</b>							
Dust generation during rock drilling shall endanger health of drillers and others working/moving around	(i)To provide dust control arrangements while rock drilling (wet gunny bags)	(i)Dust control arrangements are provided while rock drilling (wet gunny bags)	Partly	Moderate	To be continue	Ongoing	
	(ii)To provide dusk masks for rock drillers while drilling	(i)Rock drillers are equipped with dust masks while drilling	Partly	Moderate	To be continue	Ongoing	
<b>Activity: 1. 5. Hauling of material</b>							

Dust blowing from uncovered material heaps during dry weather shall endanger public health	(i)To make sure that dusty material is transported only by covered trucks.	(i)Dusty material is transported only by covered trucks.	Partly	Moderate	To be improved	Outstanding	
Trucks overloaded with hauling material shall endanger public safety.	(i)To make sure that trucks are not overloaded while material transport	(i)Trucks are not overloaded while material transport	Yes	Fair	To be continue	Outstanding	
Activity: 1. 6. Pipe-laying,Oncolumn crossing,Sea crossing below the sea bed, installation of valves and hydrants, pressure testing, installation of service connection and reinstatement of trenches							
Environmental pollution caused by marine construction	(i) Pipe line will be corrode due to seawater if material is not sea water resistant	HDPE pipes approved by engineer	Yes	-	-	Resolved	
	(ii) Pipelines will be damaged by anchors or fishing gear	The location clearly marked with buoys and other marine time signs	Partly	Fair	To be improved	Outstanding	
Fisherman concerned that marine construction will affect their livelihoods	(i)Conduct awarness program for the fisherman.	Awareness programs are carried out for fishermen.	Yes	-	-	Resolved	
Insufficient protective measures around re-excavation shall endanger public safety	(i)To provide sufficient protective measures around trenches for the safety of workers/ pedestrians /road users	(i)Adequate warning boards, barricades, luminous stickers, night lamps are provided and maintained well	Partly	Moderate	To be improved	Outstanding	
Dust generated during cutting the asphalt layer of the trench shall endanger occupational health	(i)To provide on-site dust control arrangement while cutting the asphalt layer	(i)On-site dust control arrangement is provided while cutting asphalt layer	Partly	Moderate	To be improved	Outstanding	
		(ii)well maintain the water spray at all time when using the asphalt cutter.	Partly	Moderate	To be improved	Outstanding	
Activity: 1. 7. Maintenance of storage areas							
Inadequate protective measures taken for storing flammable/hazardous material/lubricant/oils shall endanger	(i)To provide adequate protective measures for storing flammable/ hazardous material/ lubricant/oils	(i)Hazardous material (flammable/hazardous material/ lubricant/oils) are separated from human moving area	Partly	Fair	To be continue	Outstanding	

occupational safety and health.		(ii) Adequate protective measures are taken to avoid access of authorized persons	Partly	Fair	To be continue	Outstanding	
		(iii) Safety of hazardous material is regularly checked.	Partly	Moderate	To be improved	Outstanding	
Spilling of oils, lubricants, and chemicals shall pollute surrounding environment	(i) To avoid draining oil spills to surrounding environment	(i) Oil spill and chemical waste collecting arrangements are provided	Yes	Fair	To be continue	Outstanding	
		(ii) Oil spill and chemical waste disposal (to authorized collectors) arrangements are provided	No	-	-	Outstanding	
Material stockpiles (at open storage) wash away shall pollute surrounding environment.	(i) Washable material stockpiles (at open storage) are protected by rains	(i) Washable material stockpiles (at open storage) are covered by tarpaulins during the rainy seasons and surrounded by small conservation bunds	Partly	Moderate	To be improved	Outstanding	
Dust generation inside storage areas shall endanger workers' health.	(i) To provide dust masks for the store labors working in dusty areas.	(i) Dust masks are provided for the store labors working in dusty areas.	Partly	Moderate	To be improved	Outstanding	
<b>Activity: 1. 8. Maintenance of office/ labour camps/stores/sites</b>							
Lack of sanitary facilities provided at office/camps shall endanger occupational health	(i) To provide adequate sanitary facilities for the use of office/camp occupants	(i) Adequate sanitary facilities are provided for the use of office/camp occupants	Yes	Fair	To be continue	Resolved	
Unsafe electrical work (unsafe wiring, power outlets, and fixtures) shall endanger occupational safety	(i) To provide safe electrical works at office/camps/stores/sites	(i) To obtain electrical works standards certification by a qualified officer in regular intervals (quarterly)	No	-	-	Outstanding	
Lack of safety precautions (e.g. Fire extinguishers, first aide, emergency exits, safe meeting point) shall endanger occupational	(i) To provide safety precautions (e.g. Fire extinguishers, first aide, emergency exits, safe meeting point)	(i) Safety precautions such as Fire extinguishers, first aide, emergency exits, safe meeting point have been taken	Partly	Moderate	To be improved	Outstanding	

safety		(ii)Fire extinguishers are not outdated and first aid requirements are available	Partly	Moderate	To be improved	Outstanding	
		(iii)Fire-drill has been carried out	No	-	-	Outstanding	
Activity: 1. 9. Use of machinery/equipment at construction work							
Construction vibration shall damage nearby public properties	(i)To take safety precautions to avoid damages nearby public properties due to vibration	(i)Crack survey has been carried out, prior to commence the construction.	Partly	Moderate	To be improved	Outstanding	
		(ii)Low vibration equipment are deployed by increasing passes	No	-	-	Not required	
		(iii)Post crack survey has been carried out	No	-	-	Outstanding	
Noise generated during construction shall cause public nuisance	(i)To provide noise barriers when and where necessary	(i)Noise barriers are provided as necessary	No	-	-	Outstanding	
		(ii)Bi-annual baseline survey is carried out to test the noise level	Yes	Fair	To be continue	Resolved	
Fuel/oil spills shall cause environmental pollution	(i)To deploy quality tested machinery and vehicles	(i)Quality certified machinery and vehicles are deployed	No	-	-	Outstanding	
		(ii)Quality of machinery and vehicles are regularly observed	No	-	-	Outstanding	
Activity: 1. 10.Common items							
Employees attending work without wearing standard PPEs shall endanger occupational safety	(i)To provide standard PPEs (in correct size) to all employees	(i)To provide standard PPEs (in correct size) to all employees	Partly	Fair	To be continue	Outstanding	
		(ii)All employees are fully equipped with standard PPEs while attending work	Partly	Moderate	To be improved	Outstanding	
Vehicle exhaust during traffic congestion at roadside construction shall	(i)To implement engineer approved traffic management plan	(i)Traffic management plan (TMP) is approved by the engineer	Yes	Fair	To be continue	Resolved	

cause atmospheric pollution		(ii)Warning boards, speed limits, barricades, luminous stickers, night signal lamps, are adequately provided where necessary as per approved TMP	Partly	Moderate	To be continue	Outstanding	
		(iii)Safe temporary access, pedestrian passes and road humps are adequately provided	Partly	Moderate	To be improved	Outstanding	
		(iv)Traffic controllers are deployed as and when required	Yes	Moderate	To be improved	Outstanding	
Construction waste scattered at sites, yards, public moving areas shall endanger occupational/public health and safety.	(i)To provide construction waste collecting and disposal arrangement and to maintain regularly	(i)Construction waste collecting arrangement is implemented.	Yes	Fair	To be continue	Outstanding	
		(ii)Local authority permission is obtained for disposal yards.	Yes	Fair	To be continue	Outstanding	
		(iii)Regular construction waste disposal arrangements are implemented	Yes	Fair	To be continue	Outstanding	
		(iv)Disposal yards are regularly reinstated	Partly	Moderate	To be improved	Outstanding	
		(v)Construction waste is not disposed at unauthorized locations	Yes	Fair	To be continue	Outstanding	
		(vi)Construction waste is not scattered at sites, camps and office premises	Yes	Fair	To be continue	Outstanding	
Office waste/camp waste scattered around shall pollute surrounding	(i)To provide office/camp waste collecting and disposal arrangements	(i)Adequate garbage bins are provided at office/camp to collect segregated waste	Partly	-	-	Resolved	

environment		(ii)Waste segregation is introduced and implemented	Partly	-	-	Resolved	
		(iii)Waste is regularly collected by the local authority	No	-	-	Outstanding	
		(iv)Waste is not scattered over the ground	Yes	-	-	Resolved	
Dust generation during construction under dry weather shall endanger occupational/public health	(i)To provide regular water spreading system or to deploy sprinkler attached water bowsers regularly	(i)Regular water spreading system is provided or sprinkler attached water bowsers are regularly deployed	Partly	-	-	Outstanding	
		(ii)Dust is not generated at construction area	Partly	-	-	Outstanding	
		(iii)Dust is not deposited over the surrounding area	Partly	-	-	Outstanding	
		(iv)Baseline survey for air quality is regularly conducted	No	-	-	Outstanding	
Vehicles/machinery/trucks movement during construction without standard signals, warning alarms, helping assistants shall endanger occupational/public safety	(i)To deploy vehicles/machinery/ trucks having standard signals, warning alarms (in working order) by employing qualified drivers/operators with helping assistants	(i)All vehicles/machinery/ trucks deployed are fitted with standard signals, warning alarms and which are working order	Partly	Moderate	To be improved	Outstanding	
		(ii)All drivers/operators are qualified and no unqualified driver/operator is deployed whatsoever	Partly	Moderate	To be improved	Outstanding	
		(iii)Helping assistants are employed for all heavy machinery and trucks while working at sites	Partly	Moderate	To be improved	Outstanding	

Handling of unsafe power tools and equipment shall endanger safety of workers (substandard insulation, broken plug tops and bases)	(i)To provide standard power tools without substandard insulation, broken plug tops and plug bases etc.	(i)Standard power tools are used by employees without substandard insulation, broken plug tops and plug bases etc.	Partly	Moderate	To be improved	Outstanding	
Fine aggregate wash away from material heaps during rains shall pollute surrounding environment	(i)To protect fine aggregate material stockpiles at site from wash away during rains	(i)Washable material stockpiles at site are covered by tarpaulins during the rainy seasons and surrounded by small conservation bunds	Partly	Moderate	To be improved	Outstanding	
		(ii)Roads and surrounding environment is not polluted by washed material deposits	Partly	Moderate	To be improved	Outstanding	
		(iii)Baseline survey for water quality is regularly conducted	Partly	-	-	Outstanding	
Careless handling of tools, equipment, accessories, heavy items, lengthy items shall endanger safety of workers and others around	(i)To train employees for handling tools, equipment, accessories, heavy items, lengthy items associated with construction	(i)Employees are trained for handling tools, equipment, accessories, heavy items, lengthy items associated with construction	Partly	Moderate	To be improved	Outstanding	
		(ii)Employee safety programs are conducted	Yes	Fair	To be continue	Outstanding	
		(iii)Tool-box meetings are regularly conducted	Yes	Fair	To be continue	Outstanding	
Lacking public awareness about safety and construction activities shall endanger community health and safety	(i)To conduct public awareness program about safety and construction activities	(i)Public awareness programs about safety and construction activities were conducted	Yes	-	-	Resolved	
		(ii)Safety awareness programs for school children are conducted	Yes	-	-	Resolved	

#### 4. Public complains and Grievance Redress Mechanism

Grievances Redress Committee formed in all Divisional Secretariat Divisions and having quarterly meeting to discuss the issues and complaints. After the restructured of the project, now quarterly meetings are ongoing. So far 36 meetings held on DS Offices and it was explained to the community about the complaint process and the GRC details. If the complaint arise at the site, contractors immediately solve and submit the report to PD/ PMCIU. Also the due diligence report were prepared according to the packages (TWTM 1 &2, ET 1& 2) in order to identify the issues. We had received 2 no's of complaint regarding the TWTM - 1 pipe lying work,

1. Fencing Damage of Mrs. R.J.Ranjani – Immediately did the fencing works by the contractor within 5 days.
2. Tree cutting of Mrs. Arunthavapalan – Already informed to the house owner and did the tree cut. As it is the productive tree, the compensation paid to the house owner by the contractor under the third party damage.

There are no complaints so far under TWTM –2. Prior to the pipe lying works the officers visited to the every household and explained the works and got their consent to lay the works. But there are some issues raised due to the damage of fence or boundary wall. But it was rectified once the pipe lying completed and the contractor did the fencing and constructed the boundary wall. All works are monitoring by the PMCIU and the complaints are less.

Grievance redress/ suggestion forms, complaints / suggestion boxes and complain register were placed at the following four locations:

1. DS Offices (where the project activities ongoing)
2. PMCIU
3. PEIC
4. NWSDB, Regional Manger's Office
5. Contractor's site Office

## **5. Conclusion and Recommendations.**

The implementation of EMP guidelines by the Contractor is observed and presently it is applied to this package. It is the main mechanism to minimize the environmental impact due to construction activities. The Contractor should obey the EMoP guidelines at all times as it clearly explains how to mitigate the environmental damages at the environmentally sensitive areas in the project sites. All the Contractor shows his enthusiastic approach on Traffic Safety and Personal Safety activities throughout the reporting period. During the reporting period some environment issue was reported as dust emission and vibration.

## Images of Environmental Safeguard Related Activities

PPE wearing during construction activities.



Nallur Sump



Pipe laying along the A9

## Awareness Programs Conducted at Divisional Level



## Traffic Arangment – TWTM 1

